

State Water Development Commission
Gold King Mine Update
November 17, 2015

I. Summary

On August 5, 2015 EPA, its contractors (Weston & Environmental Restoration) and the Colorado Division of Reclamation, Mining and Safety were conducting an investigation of the Gold King Mine. The purpose of the investigation as detailed in the Scope of Work, was to excavate the mine portal to gain access, assess the on-going release of contaminated water from the mine and assess the feasibility of further mine remediation, including measures to address the chronic discharge of contaminated water and hazardous substances.

During the excavation process, the unconsolidated rock, soil, timber and debris filling the mine portal gave way, opening the mine and releasing a torrent estimated to be about three million gallons of water contaminated with heavy metals into Upper Cement Creek, a tributary of the Animas River, which flows through Durango and southwest Colorado into New Mexico and the San Juan River. The San Juan merges with the Colorado River at Lake Powell. Contaminated water from the mine turned the Animas River orange and polluted the river with acid drainage, heavy metals and hazardous substances. Although the blowout occurred on August 5, 2015, EPA did not notify the State of Utah until August 6, 2015. The notice contained incomplete information regarding the volume and characteristics of the water released.

On August 12, 2015, Governor Herbert issued an Executive Order in response to the discharge to the San Juan River and Lake Powell. The Executive Order described exigent circumstances constituting a state of emergency. The circumstances described in the Executive Order required immediate action to preserve and protect the health, safety and welfare of citizens and visitors to Utah.

It is estimated that the plume of contamination passed through Utah between August 9 & 15, 2015. Evidence of the plume was detected in dissolved metals and was not visually observed by any discoloration in water flow. The Utah Department of Environmental Quality has collected surface water and sediment samples as part of an ongoing monitoring and assessment plan. DEQ has compared the concentration of metals in sediments before and after the plume entered the San Juan. Based on the available data, DEQ believes the highest concentrations of contaminants have passed through the San Juan River and into Lake Powell.

Questions remain regarding the potential long term impacts of the spill on groundwater drinking water aquifers, aquatic ecosystems and soils irrigated with river water. EPA has constructed a temporary treatment plant at Gladstone,

Colorado to treat water continuing to be released from the Gold King Mine. A long term monitoring plan will be implemented by DEQ and EPA in collaboration with other Utah agencies.

II. Chronology

A. Significant Events to Date

1. August 5, 2015 – blowout at the Gold King Mine
2. August 6, 2015 EPA notifies the State of Utah and Navajo Nation of the release
3. August 12 & 19, 2015 – AG site visits Silverton & Gladstone, Colorado
4. August 12, 2015 Governor Herbert issues an Executive Order – state of emergency
5. August 24, 2015 Summary Report, EPA Internal Review
6. September 3, 2015 DEQ Demand Letter to EPA Region VIII, seeking reimbursement of costs
7. September 17, 2015 House Committee on Oversight and Government Reform – Hearing Animas Spill
8. October 7, 2015 EPA Region VIII response to DEQ demand letter
9. October 16, 2015 DOI Technical Evaluation of the Gold King Mine Incident
10. October 26, 2015 DEQ formal submission to EPA Region VIII for cost reimbursement

III. EPA and DOI Investigations

EPA and its contractors underestimated how much pressure had built up inside the mine before the excavation triggered the blowout. Based on the Action Plan, Scope of Work and other documents recently disclosed, EPA and its contractors *knew that a blowout was possible*, but failed to prepare an adequate and sufficient backup plan to respond to a release from the Gold King Mine.

A. EPA Internal Review – August 24, 2015 (Summary Report)

Based on EPA's Internal Review, the under estimate of the *pressure in the mine* was the most significant factor relating to the blowout.

B. Department of Interior Independent Investigation – October 16, 2015

EPA requested an independent technical evaluation of the Gold King Mine incident. The evaluation was performed by the Bureau of Reclamation and was peer reviewed by the U.S. Geological Survey and the U.S. Army Corp of Engineers. The review found that the release was *preventable*. The report noted that EPA chose not to bore a hole to check the amount of water in the mine before digging. Had that been done, the plan to open the mine would have been revised and the blowout likely would not have occurred.

1. Technical evaluation and Findings

In the report, the Bureau of Reclamation Evaluation Team found there was an absence of the following:

- a. An understanding that water impounded behind a blocked mine opening can create hydraulic forces similar to a dam.
- b. Analysis of potential failure modes.
- c. Analysis of downstream consequences if a failure were to occur.
- d. Engineering considerations that analyze the geologic and hydrologic conditions of the general area.
- e. Monitoring to ensure that the structure constructed to close the mine portal continues to perform as intended.
- f. An understanding of how the groundwater system affects all the mines in the area and the potential for work on one mine affecting conditions at another.

2. Recommendations

The Bureau of Reclamation Evaluation Team made the following recommendations:

- a. Because of the complexity of reopening a flooded abandoned mine, a potential failure modes analysis should be incorporated into project planning.
- b. Before opening an abandoned mine adit, review mine maps, production records, dump size, and local history about the mine to evaluate the potential volume of mine workings. If the volume is large, consider what would happen if there were an accidental release and what could be done to protect against it. A downstream consequences analysis should be a part of every complex mine remediation.
- c. Water conditions within the mine should be directly measured prior to opening a blocked mine. Indirect evidence is insufficient if the potential for a blowout exists.
- d. Where significant consequences of failure are possible, independent expertise should be obtained to review project plans and designs prior to implementation.

IV. House Committee on Oversight and Government Reform

On September 17, 2015, the full House Committee on Oversight and Government Reform held a hearing on “EPA’s Animas Spill”. EPA Administrator Gina McCarthy and others presented testimony to the Committee. Testimony at the hearing disclosed that, among other things EPA and its contractors: were aware of the possibility of a blowout; underestimated the water pressure in the mine;

misjudged the imminent danger created by conditions at the mine; and were unprepared for a major release. EPA was slow to notify the downstream states and the Navajo Nation of the release.

V. Claims for Reimbursement of Costs

A. Significant Events

1. September 3, 2015 DEQ demand letter to EPA Region VIII
2. October 7, 2015 EPA Region VIII response to DEQ
3. October 26, 2015 DEQ formal submission of claim for reimbursement (\$315,645.57)

B. DEQ Request for Confirmation

The Executive Director of the Utah Department of Environmental Quality subsequently sent a written request to EPA Region VIII on September 3, 2015 demanding confirmation of EPA's intent to reimburse the State for response costs, expenses and damages and for plans to address the continuing long term impacts caused by the discharge.

C. EPA Region VIII Response

In a letter dated October 7, 2015, Regional Administrator Shaun L. McGrath acknowledged DEQ's letter seeking reimbursement. The Regional Administrator confirmed that: claims for money damages may be made under the Federal Tort Claims Act (Standard Form 95); claims must be presented to EPA within two years; EPA regulations state that the agency has six months to resolve a claim; under CERCLA, EPA can enter into cooperative agreements with states to pay for certain costs related to response costs in connection with the mine release.

D. DEQ Submission of Resonse Costs

On October 3, 2015, DEQ submitted a claim to EPA Region VIII in the sum of \$315,645.57. The request for reimbursement was made as a *claim for response costs* as provided for under CERCLA. It is anticipated that additional claims will be submitted for costs which continue to be incurred. To date, no claims for money damages have been made under the Federal Tort Claims Act.

VI. EPA Post Incident Planning and Response

A. Red and Bonita Mine

EPA has installed a bulkhead at the Red and Bonita mine to control any sudden releases. EPA is working at the Gold King Mine to stabilize the adit entry during the winter months.

B. Water Treatment Plant at Gladstone

A temporary treatment plant has been constructed at Gladstone to treat ongoing discharges from the Gold King Mine over the winter months.

C. Long Term Monitoring and Remediation

D. Monitoring

EPA will fund efforts by the Division of Water Quality to assess the cumulative and long term effects of mine wastes released into the San Juan River and Lake Powell. The Division will focus on sediments where metals may be accumulating. The study will evaluate whether the sediment may have an effect on fish or the ecosystem and whether contaminants may be released if the sediment is disturbed by runoff or storm events.

E. Remediation

The continuing discharge of contaminated water from mines is a chronic problem and more permanent solutions must be developed. EPA is working with the State of Colorado, local leaders and other stakeholders to evaluate long-term remediation strategies in the Upper Cement Creek Basin.

VII. On-Going Review & Evaluation

- A. Reimbursement of costs and damages incurred
- B. Document Requests to EPA, the State of Colorado, contractors and mine owners
- C. Natural Resource Damage assessment
- D. Evaluation of potential “stigma” damages

VIII. Other Claims and Potential Litigation

The Navajo Nation has retained outside legal counsel (Hueston Hennigan LLP) and is apparently evaluating potential litigation. Potentially effected private property owners have also been solicited by attorneys in Colorado and New Mexico. Potential defendants include: EPA, EPA’s contractors (Environmental Restoration, Weston), State of Colorado and the owners of the mines. To date, however, no legal actions have been filed by the states, tribe or private property owners.